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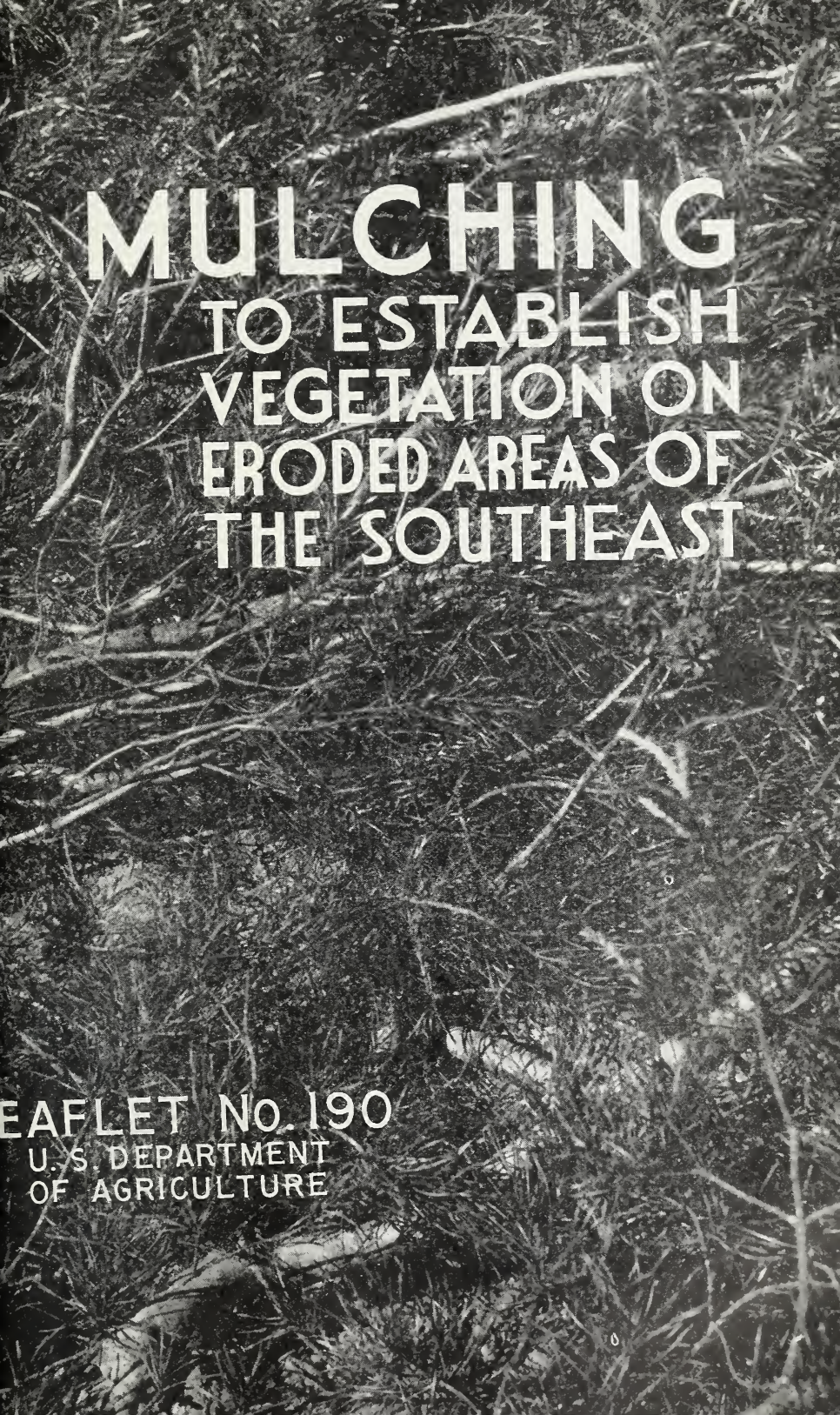
MULCHING
TO ESTABLISH
VEGETATION ON
ERODED AREAS OF
THE SOUTHEAST
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MULCHING TO ESTABLISH VEGETATION ON ERODED AREAS OF THE SOUTHEAST

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The many eroded field borders, galled spots, and gullies throughout the Southeastern States and other sections of the country offer an opportunity for the use of vegetation that will perform the dual job of controlling erosion and providing food and cover for wildlife. The establishment of vegetation on eroded sites, however, is often impracticable and difficult without some temporary protective cover. A simple and inexpensive method of overcoming this difficulty is the use of some type of mulch material (fig. 1).

Mulching is the operation of applying on the ground a thin, uniform coating of such material as pine branches, leaf litter, grain straw, *Lespedeza sericea* stems, or cane bagasse. It does not include the practice, often used by farmers in the South, of throwing brush haphazardly into gully bottoms and ditches or of smothering the ground with straw, as is commonly done for winter protection in the North.

Benefits of Mulching

The fourfold benefits of mulching are moisture conservation, seed retention, soil protection and improvement, and seedling protection.

Figure 1.—An eroded field border partly mulched with pine branches.

A layer of mulch on an eroded spot acts like the litter on a forest floor by conserving moisture and preventing soil losses (fig. 2). Because of this ground covering, evaporation of soil moisture by wind and sun is retarded, and the soil is also left in an improved condition to absorb water in larger quantities.

Protection from drying sun and wind is particularly important during and immediately following seed germination to prevent loss of the young plants as the result of soil crusting or lack of moisture. Mulch acts also as a protective cover to reduce transpiration and thus decreases plant wilting.

A mulch is also beneficial in reducing the movement of soil particles during rains. Thus, small silt deposits are formed that provide an excellent seedbed. Moreover, mulching material is organic, and in the course of time it decays and improves the site. Mulch can be classed, therefore, as an indirect fertilizing agent that reduces but does not eliminate the necessity for fertilization.

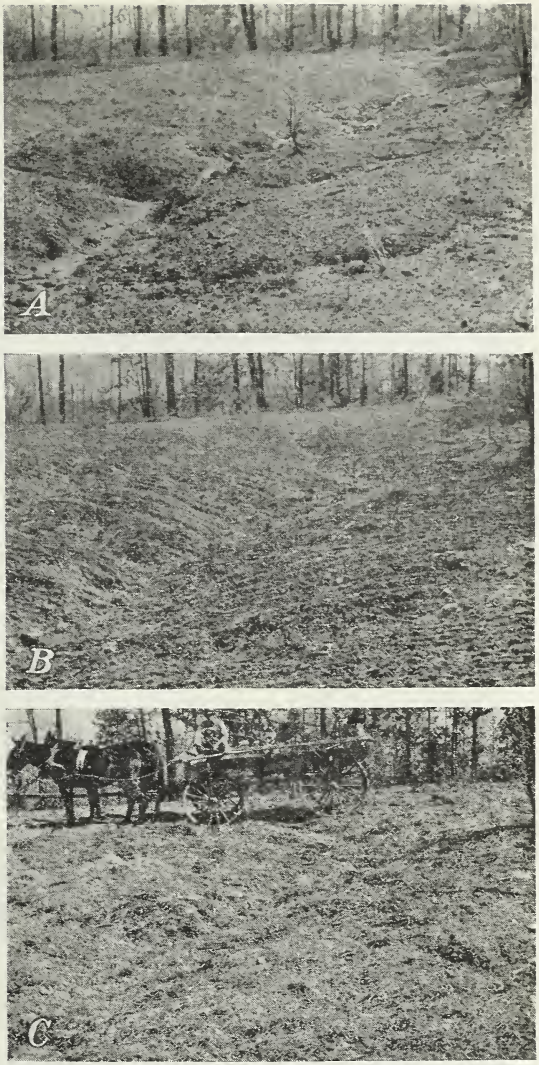

FIGURE 2.—A galled spot seeded and mulched with grain straw: *A*, Area before treatment; *B*, harrowed; *C*, seeded and mulched.

It has been found that a protective covering of mulch effectively reduces the danger of damage from frost heaving or spewing. This fact is important in connection with late seedings of perennials since the plants may not have had time to develop roots capable of withstanding the full force of frost heaving.

Mulching Materials

Most mulches are waste or refuse materials that have little or no cash value. Many different mulches can be used successfully in the Southeast. The following are listed in the order of the degree of

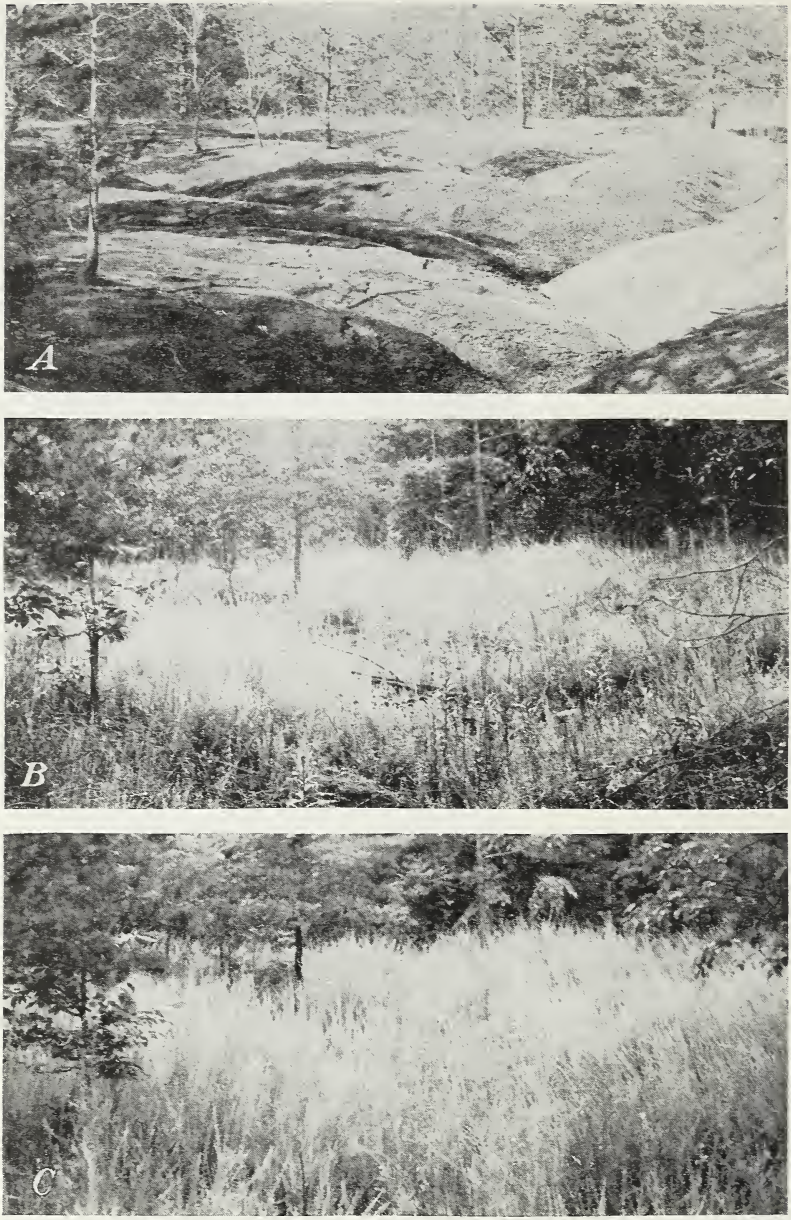

FIGURE 3.—A mulch was necessary to establish *Lespedeza sericea* on this typical gullied area: *A*, Before mulching; *B*, 18 months later the pine-brush mulch can still be seen through the growth of *L. sericea; C*, after another year's growth, the vegetation fully protects the gully.

success that has accompanied their use during the past few years of trial: Pine branches, grain straw, *Lespedeza sericea* stems, cane bagasse, pine litter, hardwood tops, and hardwood litter. The availability of mulch material usually determines the choice of mulch for a particular site.

Green Pine Branches

Green pine branches have proved to be the most successful mulch (fig. 3). This is attributable principally to the fact that they do not lie too close to the ground (fig. 4) and thus furnish the much needed shade for tender young plants without smothering them. Even though the application of pine branches may require more time than the use of other types of mulch, the additional labor is offset by the greater assurance of a successful stand from the seeding. Furthermore, pine brush often is available as a product of wood cutting, thinning, or pruning, and thus very little additional labor is required for its application.

In applying pine-brush mulch, the branches should be cut about 3 or 4 feet long and laid with the butts in the direction of the immediate run-off. If the branches are placed in this manner, the ends of the pine needles are held close to the ground in the best position to catch silt. Best results will be obtained if the work is begun at the bottom of the slope and continued to the top. Larger branches may be placed crosswise over the mulch if necessary to make it lie flat. The mulch, when properly applied, should cover approximately 50 percent of the ground. When put on too thin, the brush does not do a complete job, and when used too heavily, it smothers the vegetation beneath it.

Lespedeza Sericea Stems

Lespedeza sericea has proved to be the most dependable plant for seeding on severely eroded sites throughout areas where it is adaptable. The use of sericea stems for both mulching and seeding is proving successful if the sericea is cut soon after the seed is mature. The stiff, heavy stems are superior to most kinds of strawlike material because they are not easily blown away. Of equal importance is the complete establishment of this plant by the seeding that results when mature seed drop from the stem mulch. The stems should be applied to cover approximately 50 percent of the ground so uniformly that there are no bare or smothered spots. Field borders and similar eroded sites should be plowed or disked before mulching. However, on the sides of gullies, roadside cuts, or other sites where plowing is difficult, a satisfactory stand can be had by fall mulching without preparation.

Other Mulches

Grain straw and pine litter as mulch (fig. 5) provide good protection for germination and early plant growth if applied evenly, so that young plants will be protected but not smothered. These mulches do not, however, furnish shade later for the young plants as the pine brush does. Cane bagasse also is satisfactory as a mulch if it has weathered a year before it is used. There is an acid in freshly pressed cane bagasse that seems to exert a toxic action on newly sprouted seedlings. Another handicap to the use of straw, cane bagasse, and similar material is the difficulty of spreading the material evenly when it is wet or when winds are strong enough to blow the lighter parts away.

Fall Mulching

In the preceding paragraphs mulching has been discussed as a practice to be carried on simultaneously with seeding operations. It is possible, and in some situations advisable, to apply the mulch well in advance of seeding. The mulching may be done in later summer, fall, and early winter. After the mulch is applied, it is left undisturbed until the following seeding season.

Mulching in the fall has several advantages over mulching in the spring. The mulch cover protects the soil during winter rains, when it helps to control erosion by increasing the infiltration of moisture. Silt movement is thus reduced, and moisture, which will be needed by the plants the following season, is added to the subsoil. Where soil preparation with machinery is impractical, the mellowing of the soil by the slight freezing and thawing that takes place, even under mulch, furnishes satisfactory preparation for the establishment of vegetation. Thus, hand preparation is eliminated. Experience has shown that *Lespedeza sericea* can be more satisfactorily established by this means than other plants. Other perennials, however, may prove useful after further trial.

Probably the most significant advantage of fall mulching is that farmers can do this work after their crops are laid by in the summer or are harvested in the fall. The following spring it is necessary to

FIGURE 4.—*A*, An eroded area before mulching; *B*, after pine branches had been applied.

spend only a few moments broadcasting the seed over the mulch, when fields are too wet to work. Seeding after a rain is very desirable. The seed falls through the mulch without difficulty.

Fall mulching is particularly adapted to field borders in which the few trees that stand in the border at the edge of the woods are to be removed. Care should be exercised so that such released cutting will come in proper order of treatment; because the border should be prepared first, leaving a channel in the center for disposal of end-row water. The trees should then be cut and the limbs applied immediately to the freshly plowed strip. In this way the mulch is available at the site as a byproduct of release cutting and may be disposed of with practically no extra effort. The application of mulch assures the establishment of the seeded vegetation and protects the border against careless destruction by tenants or operators until the perennials attain maturity in their second or third year. For additional suggestions concerning field and woodland borders, see Leaflet 188, Protecting Field Borders, and Leaflet 200, Shrubs for Wildlife on Farms in the Southeast.

Successful Planting Under Mulch

Both *Lespedeza sericea* and *L. juncea*, another introduced perennial lespedeza, have responded well to mulching. Mulch has been used

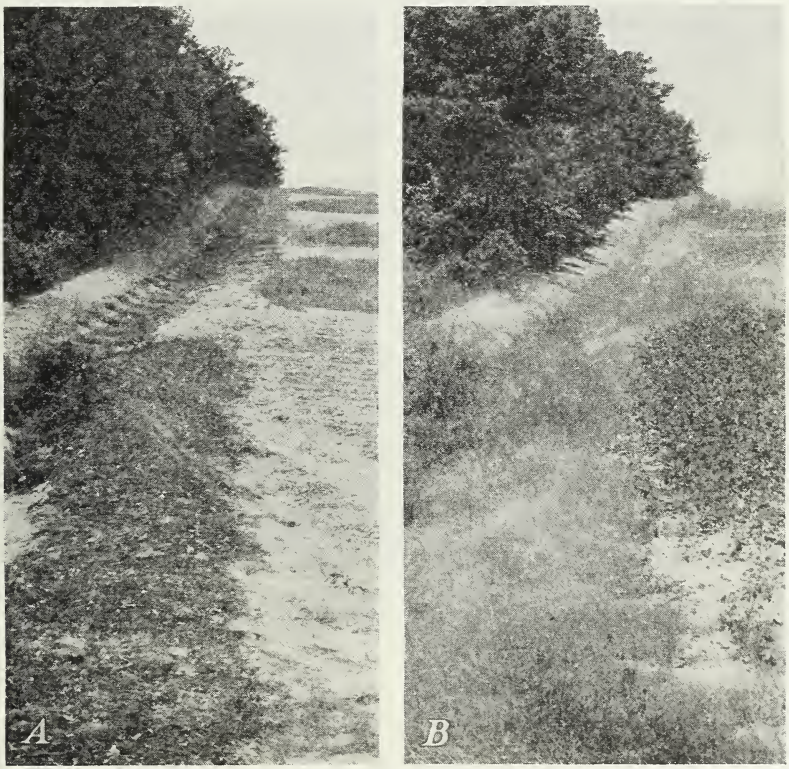

FIGURE 5.—A terrace outlet ditch bank seeded and mulched: *A*, The lower portion is protected by pine litter, the upper portion by straw; *B*, the vegetation 5 months later.

more extensively in planting *L. sericea* than any other perennial. Annual lespedezas—common, Kobe, and Korean—may be established with mulch, but stands of annuals do not insure permanent protection. *L. sericea* and the annual lespedezas should not be seeded together, because the annuals reduce the stand of the perennial.

Mulching is equally valuable in establishing vegetation on eroded areas in pastures, on road banks (fig. 6), old abandoned roadways, poor spots in cultivated fields, and on similar areas where erosion has left a scar.

On these sites, as well as on most other sites where mulch is needed, the fertility of the soil is ordinarily not adequate to produce a good growth of vegetation, and a complete fertilizer or manure and phosphate may therefore be necessary.

FIGURE 6.—A road bank seeded and mulched: *A*, Immediately after laying pine brush; *B*, the same bank completely stabilized 4 months later.

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